Co-creation processes of nature based solutions in hydrological modelling

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Co-creation processes of nature based solutions in hydrological modelling – case studies in the UK, Belgium and the Netherlands

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Climate adaptation of brook catchments is much needed in the studied regions of England, Belgium and the Netherlands. With the continuous rise of global temperatures and global change, these regions suffer from the impacts of extreme weather events such as drought and flooding. Extreme weather and climate change impacts are spatially non-uniform, uncertain and can have different strengths at local and regional level. Therefore, cities and regions need to adapt to climate change in an ambiguous way. Accordingly, there is no uniformity in the adaptive capacity of individuals, groups within society, organisations and governments or how they can respond to current and future climate change impacts.

To better understand the interlinkages in nature-based climate adaptation between the socio-economic and climate change drivers, we studied these drivers in the hydrological modelling in 3 pilot studies in the UK, the Netherlands and Belgium. Focus is on how co-creation, defined as active participation is incorporated in the hydrological modelling process, (1) within each brook catchment and (2) between the professionals, as cross border knowledge transfer. Data on the co-creation process was collected with workshops on each of the semi-annual partner meetings of each catchment. Data on the modelling process was collected by semi-structured interviews of the professionals and by using assessment of professional learning in the network (field trips). Findings on co-creation processes of nature based solutions in hydrological modelling will be compared in the UK, the Netherlands and Belgium. In the end, existing co-creation processes will be joined to a framework for co-creation which can be improved and adapted based on the gathered data. This would include: identification of stakeholder groups and their needs, the level of intended participation, the identified climate problem by the stakeholders and by the policy-makers, the planned modelling approach, the NbS etc.

Keywords: climate change, hydrology, nature-based solutions, stakeholders, climate adaptation, framework.